

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Claims 1-10. (Cancelled)

11. (Original) A method in a computer for providing information about a current state that is modeled with multiple state attributes, at least some of the state attributes having values that are requested by client-sources to be used for generating values of other state attributes, the method comprising:

receiving a request from a first client for a value of a first of the state attributes;
determining a client-source able to generate and supply the requested value of the first state attribute by using a value of at least one other state attribute;

requesting the client-source to supply the requested value of the first state attribute; and

during generating of the requested value of the first state attribute by the client-source,

monitoring requests from the client-source for values of one or more indicated state attributes needed for the generating of the requested value of the first state attribute;

monitoring other requests for values of indicated state attributes needed for generating values of state attributes that are indicated in previously monitored requests; and

when it is determined that a state attribute indicated in one of the monitored requests is the first state attribute, indicating a presence of a circular reference during the generating of the requested value of the first state attribute.

12. (Original) The method of claim 11 wherein the value of the indicated first state attribute that is requested in the one monitored request is needed for generating a value of another state attribute, and wherein the indicating of the presence of the circular reference includes halting the generating of the value of the another state attribute.

13. (Original) The method of claim 11 wherein the value of the indicated first state - attribute that is requested in the one monitored request is needed for generating a value of another state attribute, and including:

after the determining that the state attribute indicated in the one monitored request is the first state attribute,

determining a manner of generating the value of the another state attribute without needing the value of the first state attribute; and

facilitating the generating of the value of the first other state attribute in the determined manner.

14. (Original) The method of claim. 11 wherein the value of the indicated first state attribute that is requested in the one monitored request is needed for generating a value of another state attribute, and including:

after the determining that the state attribute indicated in the one monitored request is the first state attribute,

determining an alternate state attribute whose value can replace a need for the value of the another state attribute; and

facilitating a generating of the value of the alternate state attribute.

15. (Original) The method of claim 11 wherein the received request from the first client additionally indicates that the client-source is to be the source of the requested first state attribute value, and wherein the determining of the client-source is based on the receiving of the indication.

16. (Original) The method of claim 11 including, before the requesting of the client-source to supply the requested value of the first state attribute, determining whether a previously obtained value satisfies a criteria for the requested value, and wherein the requesting is performed only when it is determined that the previously obtained value does not satisfy the criteria.

17. (Original) The method of claim 11 including receiving the value of the first state attribute from the client-source and supplying the received value to the first client.

18. (Original) The method of claim 11 including determining whether a requested value of an indicated state attribute is needed for the generating of a value of another state attribute that is indicated in one of the monitored requests based on an identifier related to the generating of the first state attribute value that is included in the request.

19. (Original) The method of claim 11 wherein the multiple state attributes represent information about a user of the computer.

20. (Original) The method of claim 19 wherein the represented information reflects a modeled mental state of the user.

21. (Original) The method of claim 11 wherein the multiple state attributes represent information about the computer.

22. (Original) The method of claim 11 wherein the multiple state attributes represent information about a physical environment.

23. (Original) The method of claim 11 wherein the multiple state attributes represent information about a cyber-environment of a user of the computer.

24. (Original) The method of claim 11 wherein receiving of the requested value by the first client prompts the first client to present information to a user of the first client.

25. (Original) A computer-readable medium containing contents that cause a computing device to provide information about a current state that is modeled with multiple state attributes, at least some of the state attributes having values that are requested by client-sources to be used for generating values of other state attributes, by:

receiving a request from a first client for a value of a first of the state . attributes;

determining a client-source able to generate and supply the requested value of the first state attribute by using a value of at least one other state attribute;

requesting the client-source to supply the requested value of the first state attribute; and during generating of the requested value of the first state attribute by the client-source,

monitoring requests from the client-source for values of one or more indicated state attributes needed for the generating of the requested value of the first state attribute;

monitoring other requests for values of indicated state attributes needed for generating values of state attributes that are indicated in previously monitored requests; and

when it is determined that a state attribute indicated in one of the monitored requests is the first state attribute, indicating a presence of a circular reference during the generating of the requested value of the first state attribute.

26. (Original) The computer-readable medium of claim 25 wherein the computer- readable medium is a memory of the computing device.

27. (Original) A computing device for providing information about a current state that is represented with multiple attributes, comprising:

an attribute value request component that is capable of receiving a request for a value of a first of the state attributes from a first client; and

an attribute value supplier component that is capable of determining a client-source able to generate and supply the requested value of the first state attribute by using a value of at least one other state attribute, of requesting the client-source to supply the requested value of the first state attribute, and of, during generating of the requested value of the first state attribute by the client-source, monitoring requests from the client- source for values of one or more indicated state attributes needed for the generating of the requested value of the first state attribute, monitoring other requests for values of indicated state attributes needed for generating values of other state attributes that are indicated in one of the monitored requests, and indicating

presence of a circular reference when it is determined that a state attribute indicated in one of the monitored requests is the first state attribute.

28. (Original) The computing device of claim 27 wherein the attribute value request component and the attribute value supplier component are part of an intermediary module executing in memory.

29. (Original) The computing device of claim 27 further comprising multiple sources and multiple clients executing in the memory.

Claims 30-41. (Cancelled)

42. (Currently Amended) A method in a portable computer for providing information about a context of at least one of the computer, the user of the computer, the physical environment of the computer and the available electronic information environment of the computer that is modeled with multiple context attributes, at least some of the context attributes having values used by modules for generating values of other context attributes, comprising:

determining that a first module is generating a first value of a first of the context attributes of the modeled context; and

determining that a circular reference exists when it is determined that a module is to generate another value of the first context attribute such that the generating of the another value causes requesting from another module to generate a value of an attribute whose generating is caused by the generating of the first another value of the first context attribute.

43. (Original) The method of claim 42 wherein the determining that the first module is generating the first value of the first context attribute is based on receiving a request from the first module for a value of another attribute to be used in the generating of the first value, and wherein the determining that a module is to generate the another value of the first context attribute is based on receiving a request for the another value from a module generating a value of a context attribute that is to be used as part of the generating of the first value.

44. (Original) The method of claim 43 wherein the determining that the request for the value of the another context attribute is to be used in the generating of the first value of the first context attribute is based on an indication of the first context attribute that is included in the request.

45. (Original) The method of claim 43 wherein the determining that the request for the value of the another context attribute is to be used in the generating of the first value is based on an identifier for the generating of the first value that is included in the request.

46. (Original) The method of claim 42 wherein the determining that the first module is generating the first value of the first context attribute is based on supplying a value of another attribute to the first module whose receipt causes the first module to generate the first value, and wherein the determining that a module is to generate the another value of the first context attribute is based on receiving another value of the another attribute that is to be supplied to the first module.

47. (Original) The method of claim 46 wherein the determining that the receipt of the value of the another attribute by the first module causes the first module to generate the first value is based on a previously received message from the first module.

48. (Original) The method of claim 46 wherein the determining that the generating of the another value of the first context attribute is caused by the generating of the first value is based on an identifier for the generating of the first value that is included with the received another value of the another attribute.

49. (Original) The method of claim 42 including receiving from each of the modules that use values of context attributes to generate values of other context attributes an indication of the context attributes whose values are to be used by the module and of the context attributes for which values are to be generated, and wherein the determining that a module is to generate another value of the first context attribute caused by the generating of the first value of the first context attribute is based on the received indications.

50. (Original) The method of claim 42 including, after the determining that the circular reference exists, preventing the generating of the another value of the first context attribute by the module.

51. (Original) The method of claim. 42 wherein the multiple context attributes represent information about a user of the computer.

52. (Original) The method of claim 42 wherein the modeled context is a current context.

53. (Original) The method of claim 42 wherein the context attributes are part of a predefined taxonomy of attributes.

54. (Original) The method of claim 42 wherein the context attributes are dynamically defined by source modules who indicate an ability to supply values for the defined attributes.

55. (Original) The method of claim 42 wherein the context attributes are dynamically defined by client modules who indicate an interest in receiving values for defined attributes.

56. (Original Amended) A computer-readable medium whose contents cause a computing device to provide information about a context of at least one of the device, the user of the device, the physical environment of the device and the available electronic information

environment of the device that is modeled with multiple context attributes, at least some of the context attributes having values used by modules for generating values of other context attributes, by:

determining that a first module is generating a first value of a first of the context attributes of the modeled context; and

determining that a circular reference exists when it is determined that a module is to generate another value of the first context attribute such that the generating of the another value causes requesting from another module to generate a value of an attribute whose generating is caused by the generating of the ~~first~~ another value of the first context attribute.

57. (Currently Amended) A computer-readable generated data signal transmitted via a transmission medium, the generated data signal having encoded contents that cause a computer system to provide information about a context of at least one of the computer system, the user of the computer system, the physical environment of the computer system and the available electronic information environment of the computer system that is modeled with multiple context attributes, at least some of the context attributers having values used by modules for generating values of other context attributes, by:

determining that a first module is generating a first value of a first of the context attributes of the modeled context, and

determining that a circular reference exists when it is determined that a module is to generate another value of the first context attribute such that the generating of the another value causes requesting from another module to generate a value of an attribute whose generating is caused by the generating of the ~~first~~ another value of the first context attribute.